

Work Order ID: 78930

78930

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January 17, 2012 10:52:29 AM

Item ID: D4588-1 Accept *N900040100* Setup Start *NS1*
 Revision ID: PRELIM Stop *NS2*
 Item Name: Torsion Spring
 Start Date: 1/17/12 Start Qty: 50.00 *50* Cust Item ID:
 Required Date: 1/31/12 Req'd Qty: 50.00 *50* Customer:
 Reference:

Approvals: Process Plan: CL Date: 12/01/17 Tooling: Date: Run Start *NR1*
 QC: Date: SPC (Y/N): Date: Stop *NR2*

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Per Hours | Tool ID | Tool # | Plan Code | Accept | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|--------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|--------|---------------|------------------|----------------|

| Draw Nbr | Revision Nbr |
|----------|--------------|
| D4588 | PA2 |

Rev A 3-154

| | | | | | | | | | |
|-----|------------|------|--|--|--|--|--|--|--|
| 100 | PURCHASING | 0.00 | | | | | | | |
|-----|------------|------|--|--|--|--|--|--|--|

CL 12/01/17 50

100
 Purchasing
 Purchasing
 Memo
 Issue P/O: 15902
 Possible supplier: Victory springs
 Material per dwg D4588
 material release note required

| | | | | | | | | | |
|-----|--|------|--|--|--|--|--|--|--|
| 110 | Receive & Inspect for Damage & Mat'l Certs | 0.00 | | | | | | | |
|-----|--|------|--|--|--|--|--|--|--|

110
 Packaging
 Packaging
 Memo
 Ensure Material Release Note is attached

01/20/16 50

QC6- Inspect dimensions to drawing

0.00 - inspected to PA1
 Dry only 8/2/12/06 (x50)
 Memo

Revised to Rev A DW 1/30/12

Dart Aerospace Ltd
 W/O:
 DATE

~~PRELIMINARY ISSUE~~

WORK ORDER CHANGES

| STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
|------|------------------|----|------|-----|-------------------------------------|--------------------------|
| | | | | | | |
| | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Work Order ID 78930

78930

Page 2

January 17, 2012 10:52:29 AM

Item ID: D4588-1 Accept

Revision ID: PRELIM

Item Name: Torsion Spring

Start Date: 1/17/12 Start Qty: 50.00 *50*

Required Date: 1/31/12 Req'd Qty: 50.00 *50*

Reference:

N900040100

Setup Start *NS1*

Stop *NS2*

Cust Item ID:

Customer:

Approvals: Process Plan: Date: Tooling: Date:

QC: Date: SPC (Y/N): Date:

Run Start *NR1*

Stop *NR2*

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 150 | Identify as per dwg & Stock Location: <i>CA</i> | 0.00 | | | | | | | |
| *150* | | | | | | | | | |
| Packaging | Memo | 0.00 | | | | | | | |
| Packaging | | | | | | | | | |
| 160 | QC21- Final Inspection - Work Order Release | 0.00 | | | | | | | |
| *160* | | | | | | | | | |
| QC | Memo | 0.00 | | | | | | | |
| Quality Control | | | | | | | | | |

ME 13-2-27

ML 13-03-27

ME 13-2-27

POSITIVE RECALL

EFFECTIVE

AUTH

ED

16

DATE

13/3/7

9-29

to be used 2/6/30

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Picklist Print

January 17, 2012 10:52:28 AM

Page 1

Work Order ID: 78930

Parent Item: D4588-1

Parent Item Name: Torsion Spring

Start Date: 1/17/12

Required Date: 1/31/12

Start Qty: 50.00

Required Qty: 50.00

Comments: IPP revA 12.01.17 new issue EC verified by:DD

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| D4588-1P Torsion Spring | | Purchased | No | | | | Each | 0.0000 | | 50 | | 1/17/12 | (50) |

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

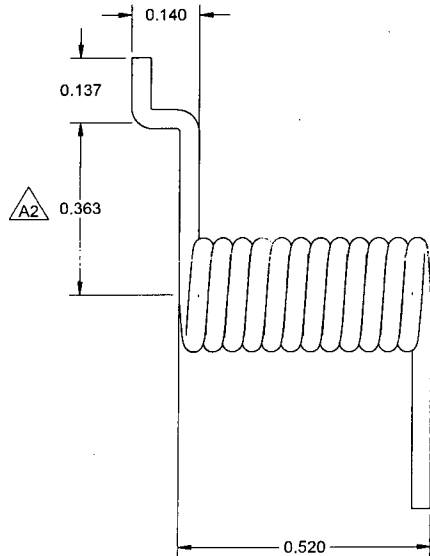
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

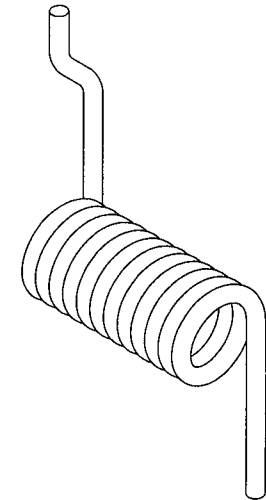
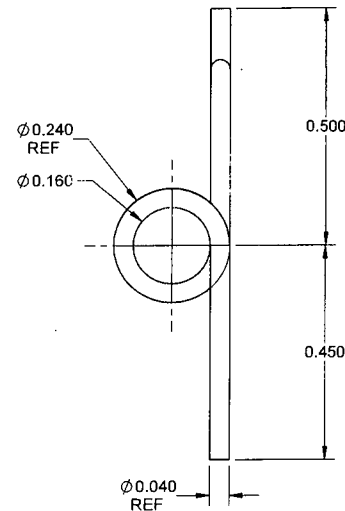
| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

SPECIFICATION CONTROL DRAWING



D4588-1 TORSION SPRING



**PRELIMINARY A2
12.01.13 (AP)**

*CL 12/01/17
W/O: 78930*

NOTES:

- 1) MATERIAL: 301/304 STAINLESS STEEL SPRING WIRE, $\phi 0.040$, PER ASTM A666/A313
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: WITH DART P/N "D4588-1" AND BATCH NUMBER "BXXXXX" PER DART QSI 044 6.6 (REMOVABLE TAG)
- 7) WEIGHT: LESS THAN 0.01 lbs

| A2 | LEG DIMENSION CHANGED | AP | 12.01.13 |
|----------------|-----------------------|--|--------------|
| A1 | NEW ISSUE | AP | 12.01.12 |
| REV. | DESCRIPTION | BY | DATE |
| Revision Table | | | |
| DESIGN | AP | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| DRAWN | AP | | |
| CHECKED | | DRAWING NO. | REV. PA1 |
| MFG. APPR. | | D4588 | SHEET 1 OF 1 |
| APPROVED | | TITLE | SCALE |
| DE APPR. | | TORSION SPRING | NTS |
| DATE | 12.01.12 | <small>COPYRIGHT © 2012 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small> | |



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO15902

Purchase Order Date 1/17/12

PO Print Date 1/17/12

Page Number 1 of 1

Order From :

VC-VIC002

VICTORY SPRING LTD.
#2 6104 - 82 AVE.
EDMONTON, AB T6B 0E7
CA

Contact Name

Vendor Phone

866 230 5312

Vendor Fax

866 230 5338

Vendor Account Nbr

Buyer

Chantal Lavoie

Requisition Nbr

Tax Resale Nbr

10127-2607

Terms

Net 30

Currency

CAD

FOB

Destination-Collect

Ship To :

DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

6126417

| Line Nbr | Reference Revision ID Vendor Part Number | Description/ Mfg ID | Req Date/ Taxable | Req Qty/ Unit of Measure | Ship Method | Unit Price | Extended Price |
|----------|--|------------------------|----------------------|-----------------------------|------------------|------------|-------------------|
| D4588-IP | | Torsion Spring | 1/31/12 Yes | 50.00 Each | FedEx PI collect | \$6.8000 | \$340.00 |

Special Inst: AS PER DWG D4588 REV. PA2
B78930

PO Total:

\$340.00

Change Nbr: 1

Change Date: 1/17/12

No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required when applicable

CERTIFICATE OF CONFORMANCE

| | |
|----------------------------------|----------------|
| REPORT FOR : Dart Aerospace Ltd, | DATE: 2/3/2012 |
| PART/DRAWING #: D4588 - 1P | PO # PO15902 |
| SPRING DESCRIPTION: Torsion | QUANTITY: 50 |

| CHARACTERISTIC | SPECIFIED | MEASURED | NOTES |
|-------------------|-----------|----------|--------------------------------------|
| Material type | SS 302 | yes | |
| Material diameter | 0.04 | 0.041 | |
| Coil I.D. | 0.160 | 0.154 | |
| Coil O.D. | 0.24 | 0.235 | |
| Number of Coils | 12 | 12 | |
| Free Length | 0.52 | 0.514 | |
| Helix | LHW | LHW | |
| Legs | dwg. | see note | z-bend increased from .140" to .180" |
| | | | |

COMMENTS

Mill Certificate attached: yes
Material Heat Number: 41249

Inspected by: *Jeremy Burrowes*

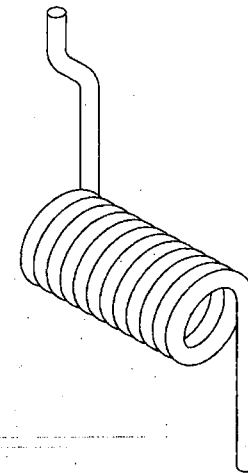
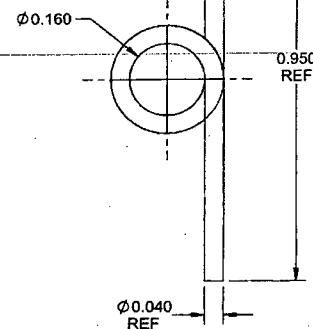
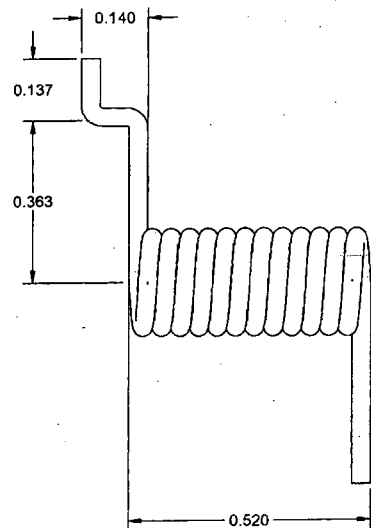
MATERIAL CERTIFICATION

| REPORT FOR: Dart Aerospace Ltd. | DATE: 2/3/2012 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------------|-----------------|----------------------------|--|-----------------|---------|-------|-------|--------------|-----------|--------|--------|----------------------------|---------|--------|-------|-----------|------------|--------|-------|--|-------------|--------|-------|--|---------|--------|-------|--|-----------|-------|-------|--------------|-------------|-------|-------|--|----------|--------|-------|--|----------|-------|-------|--|
| PART/DRAWING #: D4588 - 1P | PO # PO15902 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SPRING DESCRIPTION: Torsion | QUANTITY: 58 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MATERIAL GRADE: T302 Stainless Steel Wire Spring ASTM-313-03 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>PROPERTIES:</p> <table> <thead> <tr> <th colspan="3"><u>Chemical</u></th> <th><u>Physical</u></th> </tr> </thead> <tbody> <tr> <td>Carbon:</td> <td>(C)</td> <td>0.071</td> <td>Size: 0.041"</td> </tr> <tr> <td>Chromium:</td> <td>(Cr)</td> <td>18.380</td> <td>Tensile: 285,000 / 291,000</td> </tr> <tr> <td>Copper:</td> <td>(Cu)</td> <td>0.480</td> <td>Hardness:</td> </tr> <tr> <td>Manganese:</td> <td>(Mn)</td> <td>1.380</td> <td></td> </tr> <tr> <td>Molybdenum:</td> <td>(Mo)</td> <td>0.360</td> <td></td> </tr> <tr> <td>Nickel:</td> <td>(Ni)</td> <td>8.150</td> <td></td> </tr> <tr> <td>Nitrogen:</td> <td>(N)</td> <td>0.070</td> <td>Heat # 41249</td> </tr> <tr> <td>Phosphorus:</td> <td>(P)</td> <td>0.029</td> <td></td> </tr> <tr> <td>Silicon:</td> <td>(Si)</td> <td>0.420</td> <td></td> </tr> <tr> <td>Sulphur:</td> <td>(S)</td> <td>0.001</td> <td></td> </tr> </tbody> </table> <p><i>Signature: S 12/02/06 to Paul Dwy</i></p> | | <u>Chemical</u> | | | <u>Physical</u> | Carbon: | (C) | 0.071 | Size: 0.041" | Chromium: | (Cr) | 18.380 | Tensile: 285,000 / 291,000 | Copper: | (Cu) | 0.480 | Hardness: | Manganese: | (Mn) | 1.380 | | Molybdenum: | (Mo) | 0.360 | | Nickel: | (Ni) | 8.150 | | Nitrogen: | (N) | 0.070 | Heat # 41249 | Phosphorus: | (P) | 0.029 | | Silicon: | (Si) | 0.420 | | Sulphur: | (S) | 0.001 | |
| <u>Chemical</u> | | | <u>Physical</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Carbon: | (C) | 0.071 | Size: 0.041" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chromium: | (Cr) | 18.380 | Tensile: 285,000 / 291,000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Copper: | (Cu) | 0.480 | Hardness: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Manganese: | (Mn) | 1.380 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Molybdenum: | (Mo) | 0.360 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nickel: | (Ni) | 8.150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nitrogen: | (N) | 0.070 | Heat # 41249 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Phosphorus: | (P) | 0.029 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Silicon: | (Si) | 0.420 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sulphur: | (S) | 0.001 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Certified by: Jeremy Burrowes

Victory Spring Ltd. certifies this to be a true & accurate copy of the original contained in the company records.

SPECIFICATION CONTROL DRAWING



D4588-1 TORSION SPRING

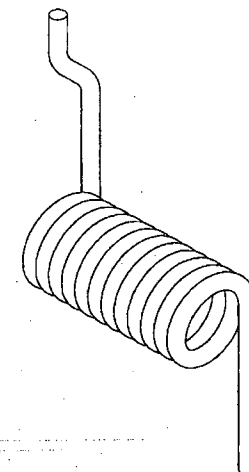
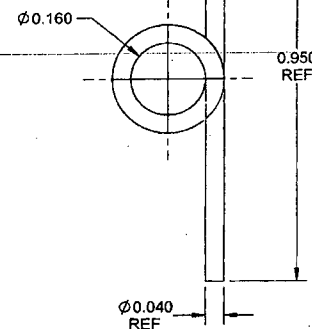
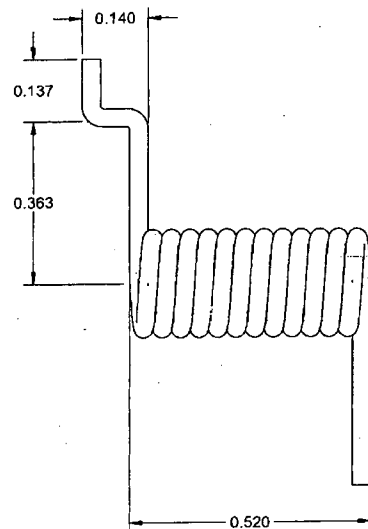
2012-06-05

NOTES:

- 1) MATERIAL: 301/304 STAINLESS STEEL, Ø0.040, PER ASTM A666/A313
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: WITH DART P/N "D4588-1" AND BATCH NUMBER "BXXXXX" PER DART QSI 044 6.6
- 7) WEIGHT: LESS THAN 0.01 lbs
- 8) PREFERRED SUPPLIER: VICTORY SPRING, EDMONTON, ALBERTA, MANUFACTURERS P/N D4588-1P

| | | | |
|----------------|-------------|--|--------------|
| A | NEW ISSUE | AP | 12.01.12 |
| REV. | DESCRIPTION | BY | DATE |
| Revision Table | | | |
| DESIGN | AP | DART AEROSPACE LTD | |
| DRAWN | AP | HAWKESBURY, ONTARIO, CANADA | |
| CHECKED | | DRAWING NO. | REV. A |
| MFG. APPR. | | D4588 | SHEET 1 OF 1 |
| APPROVED | | TITLE | SCALE |
| DE APPR. | | TORSION SPRING | NTS. |
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SPECIFICATION CONTROL DRAWING



D4588-1 TORSION SPRING

2012-06-05

NOTES:

- 1) MATERIAL: 301/304 STAINLESS STEEL, Ø0.040, PER ASTM A666/A313
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 013 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: WITH DART P/N "D4588-1" AND BATCH NUMBER "BXXXXX" PER DART QSI 044 6.6
- 7) WEIGHT: LESS THAN 0.01 lbs
- 8) PREFERRED SUPPLIER: VICTORY SPRING, EDMONTON, ALBERTA; MANUFACTURERS P/N D4588-1P

| | | | |
|----------------|-------------|--|--------------|
| A | NEW ISSUE | AP | 12.01.12 |
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| DESIGN | AP | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| DRAWN | AP | | |
| CHECKED | | DRAWING NO. | REV. A |
| MFG. APPR. | | D4588 | SHEET 1 OF 1 |
| APPROVED | | TITLE | SCALE |
| DE APPR. | | TORSION SPRING | NTS |
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